

FIG. 1

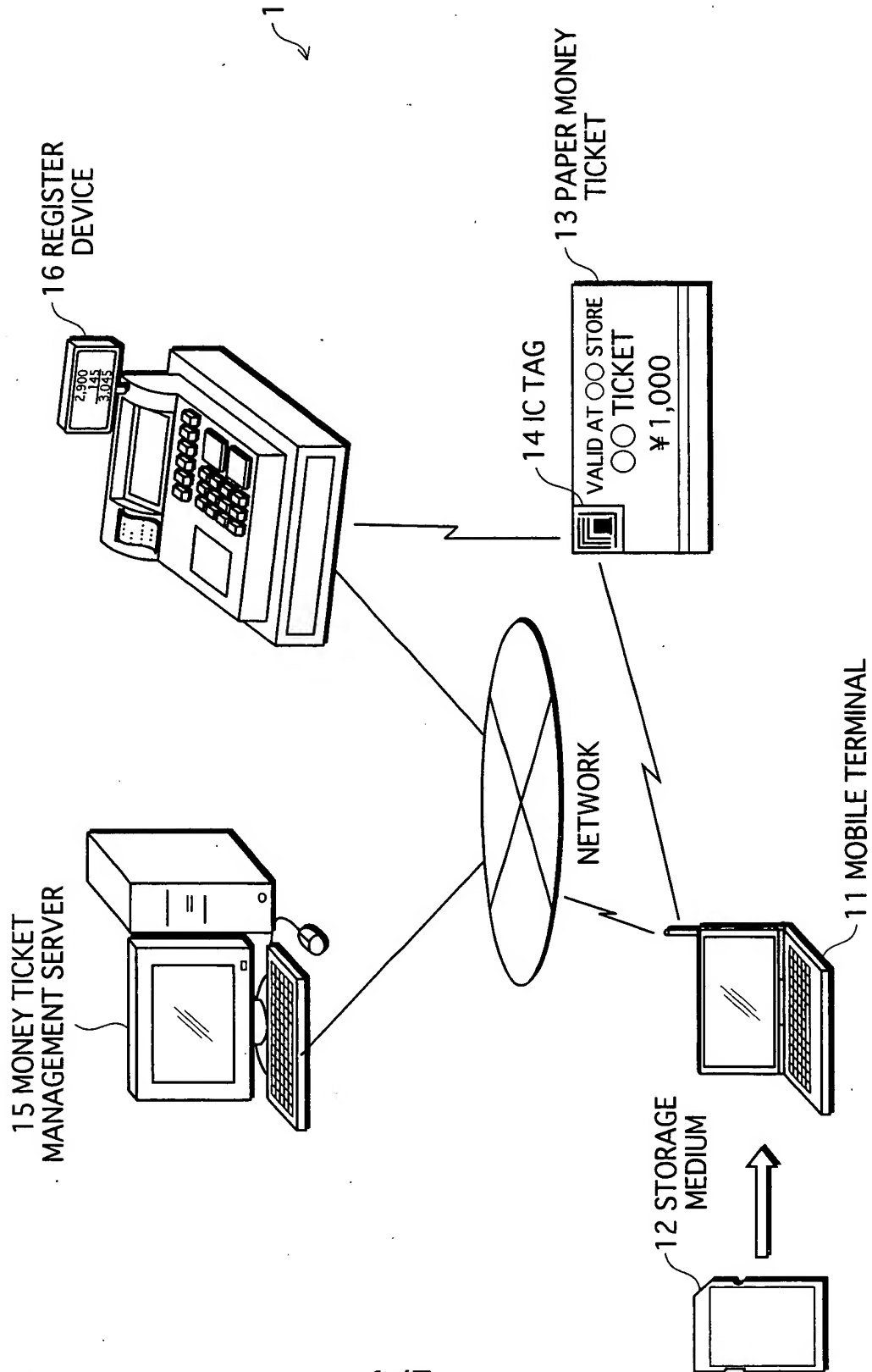


FIG.2

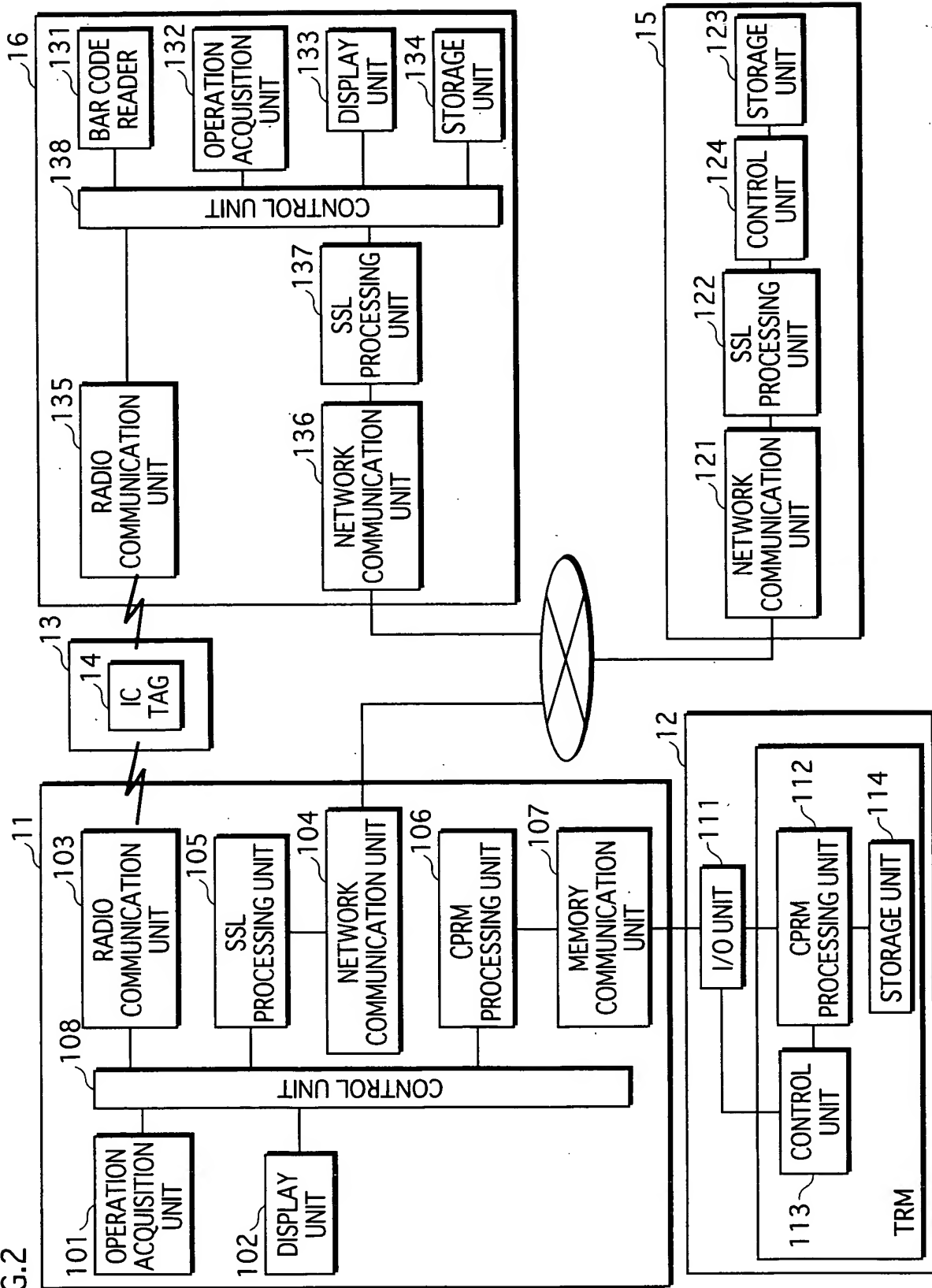


FIG.3

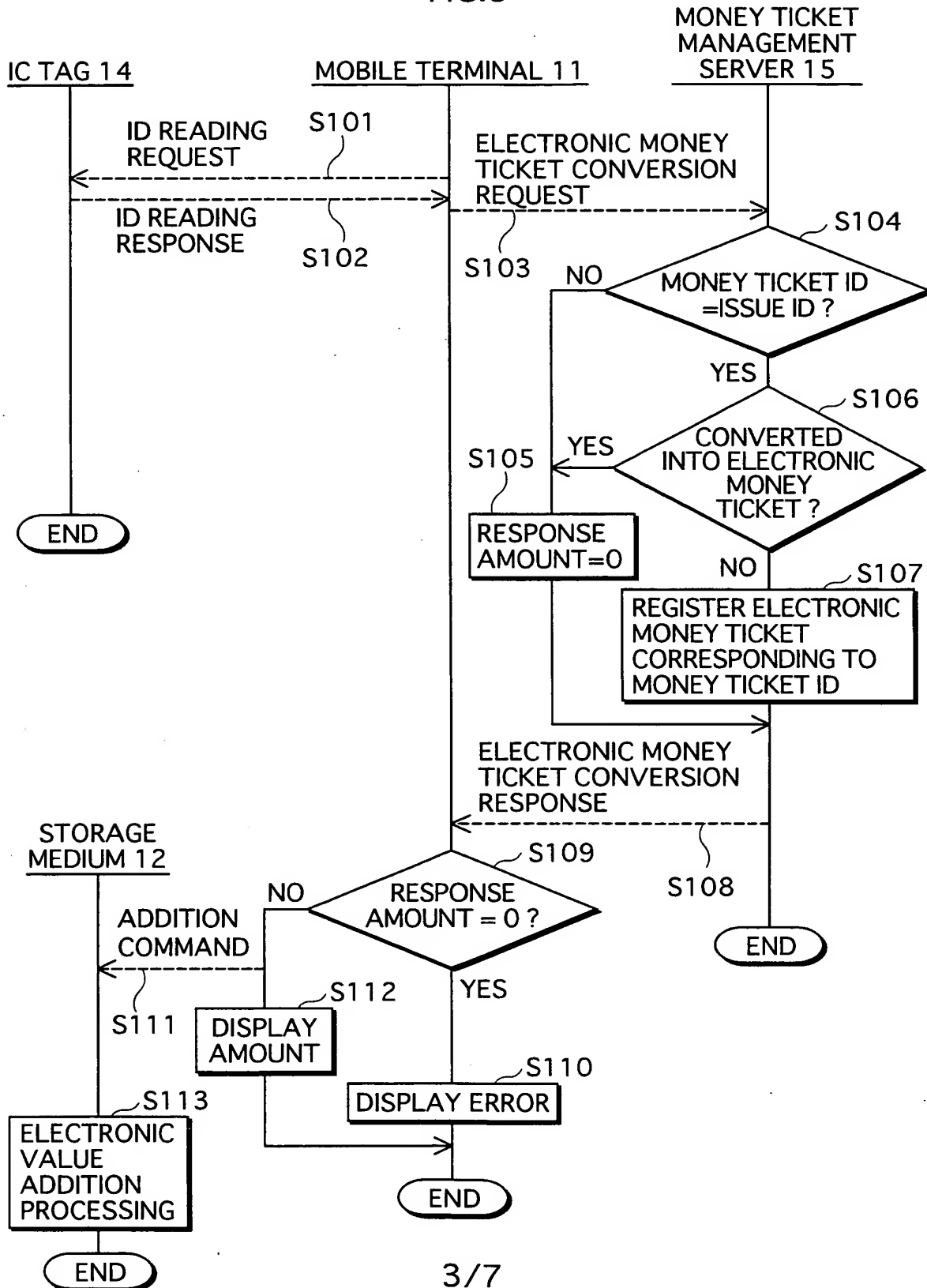


FIG.4

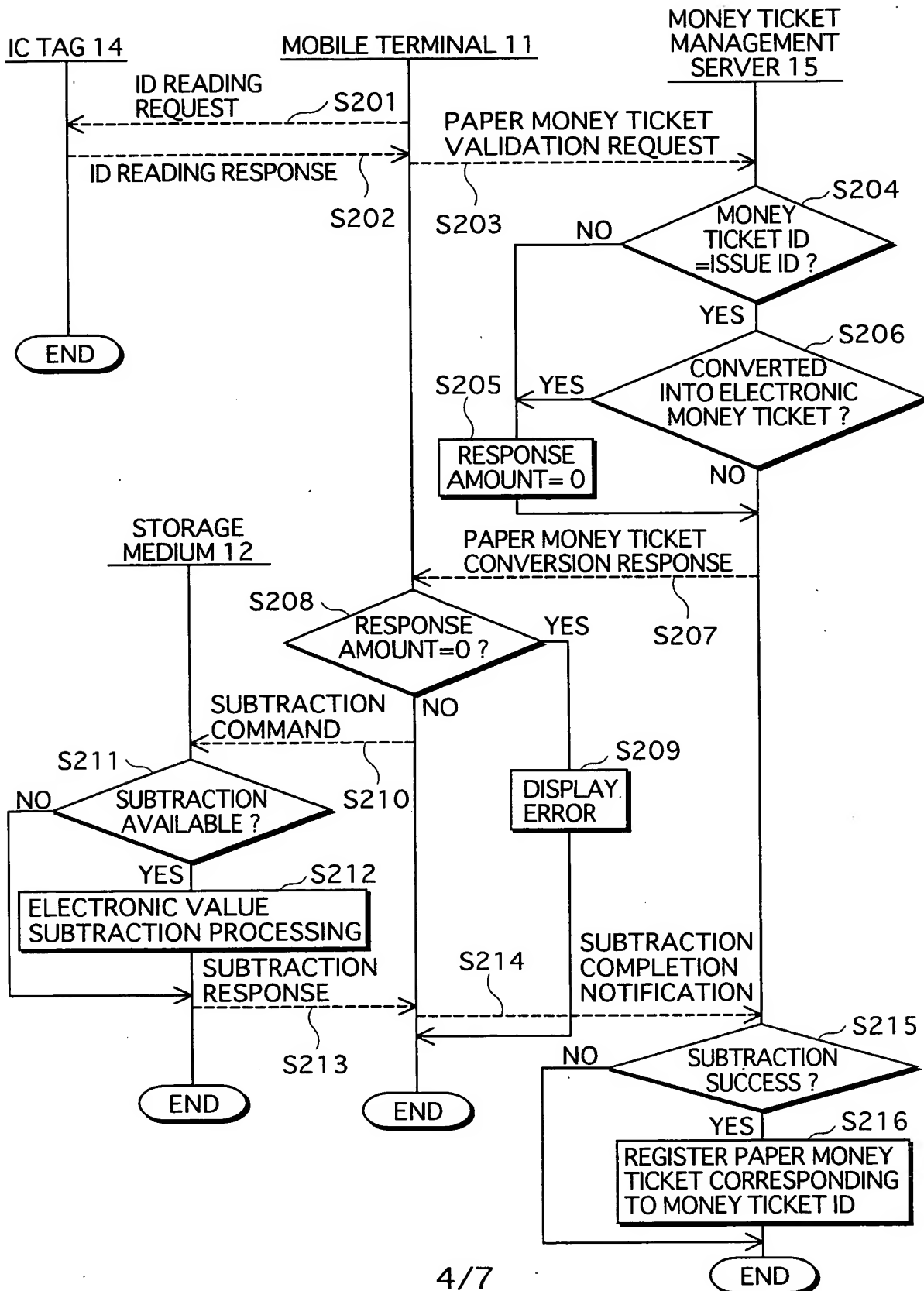
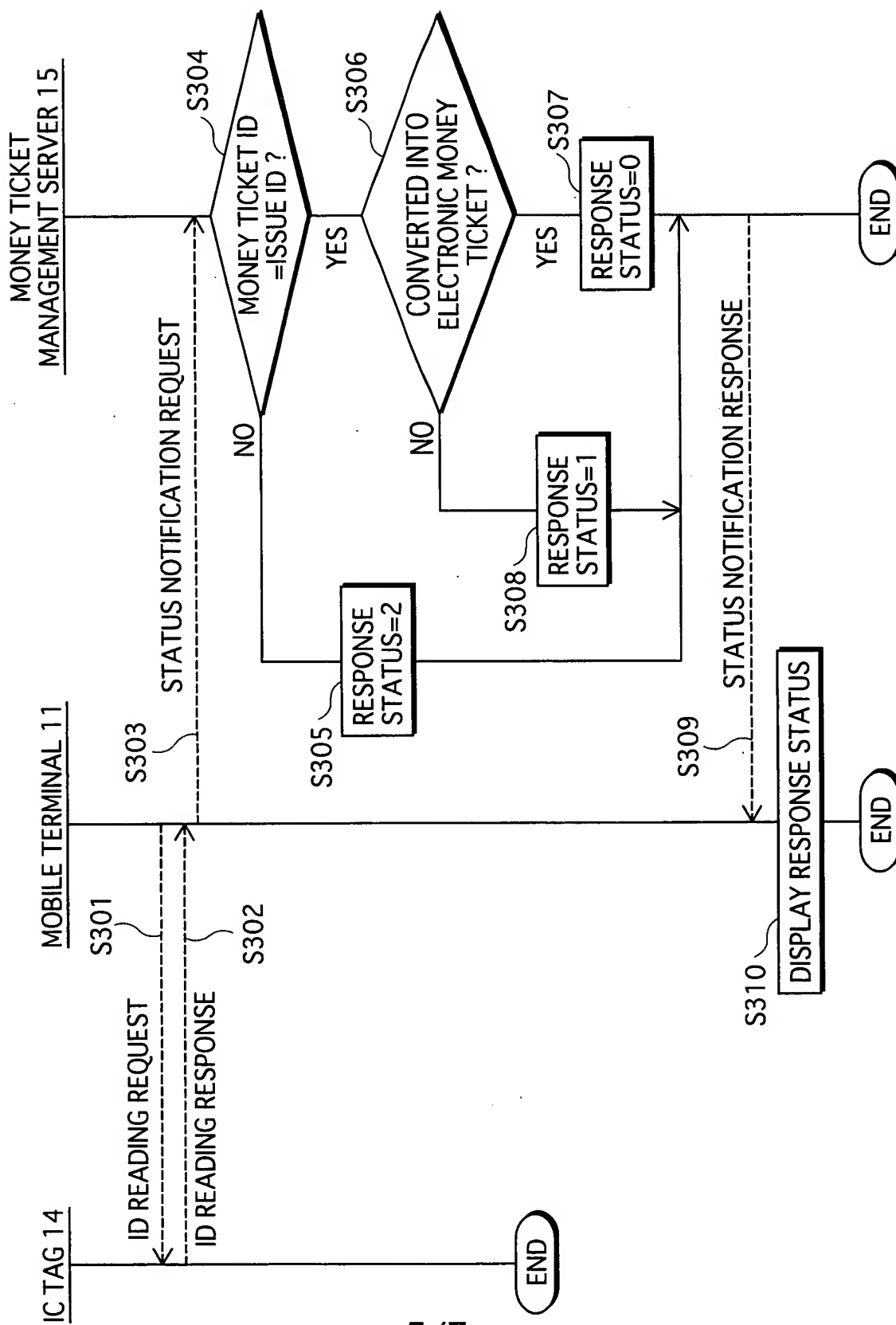


FIG.5



The flowchart illustrates the payment processing system, involving the IC TAG 14, REGISTER DEVICE 16, and MONEY TICKET MANAGEMENT SERVER 15. The process begins with the IC TAG 14 sending an ID READING REQUEST (S402) to the REGISTER DEVICE 16, which responds with an ID READING RESPONSE (S403). The REGISTER DEVICE 16 then sends a STATUS NOTIFICATION REQUEST (S401) to the MONEY TICKET MANAGEMENT SERVER 15. The server checks if the MONEY TICKET ID equals the ISSUE ID (S405). If YES, it checks if the ticket is converted into electronic money (S407). If YES, it sends a RESPONSE AMOUNT = 0 (S406) to the REGISTER DEVICE 16. If NO, it reads the amount corresponding to the money ticket ID (S408) and sends a STATUS NOTIFICATION RESPONSE (S409) to the REGISTER DEVICE 16. The REGISTER DEVICE 16 then checks if the PAYMENT AMOUNT - RESPONSE AMOUNT is greater than 0 (S410). If YES, it calculates the UPDATED PAYMENT AMOUNT (S411), displays it on the display unit (S412), and prepares for reading the next paper money ticket (S413). If NO, it checks if the CHANGE AMOUNT is 0 (S414). If YES, it ends the process. If NO, it sends an ADDITION REQUEST (S415) to the MOBILE TERMINAL 11. The MOBILE TERMINAL 11 sends an ADDITION COMMAND (S416) to the STORAGE MEDIUM 12, which performs ELECTRONIC VALUE ADDITION PROCESSING (S418) and ends. The MOBILE TERMINAL 11 also ends (S417).

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graph TD
    IC_TAG_14[IC TAG 14] -- S402 ID READING REQUEST --> REGISTER_DEVICE_16[REGISTER DEVICE 16]
    REGISTER_DEVICE_16 -- S403 ID READING RESPONSE --> IC_TAG_14
    REGISTER_DEVICE_16 -- S401 STATUS NOTIFICATION REQUEST --> MONEY_TICKET_SERVER_15[MONEY TICKET MANAGEMENT SERVER 15]
    MONEY_TICKET_SERVER_15 -- S405 MONEY TICKET ID = ISSUE ID ? --> YES1[YES]
    MONEY_TICKET_SERVER_15 -- S404 NO --> REGISTER_DEVICE_16
    YES1 -- S407 --> CONVERTED{CONVERTED INTO ELECTRONIC MONEY TICKET ?}
    CONVERTED -- S406 YES --> REGISTER_DEVICE_16
    CONVERTED -- S408 NO --> READ_AMOUNT[READ AMOUNT CORRESPONDING TO MONEY TICKET ID]
    READ_AMOUNT -- S409 STATUS NOTIFICATION RESPONSE --> REGISTER_DEVICE_16
    REGISTER_DEVICE_16 -- S410 --> PAYMENT_RESPONSE{PAYMENT AMOUNT - RESPONSE AMOUNT > 0 ?}
    PAYMENT_RESPONSE -- YES --> S411[UPDATED PAYMENT AMOUNT ← PAYMENT AMOUNT - RESPONSE AMOUNT]
    S411 --> S412[DISPLAY UPDATED PAYMENT AMOUNT ON DISPLAY UNIT]
    S412 --> S413[PREPARE FOR READING NEXT PAPER MONEY TICKET]
    S413 --> S414{CHANGE AMOUNT = 0 ?}
    S414 -- YES --> END1[END]
    S414 -- NO --> S415[DISPLAY CHANGE AMOUNT ON DISPLAY UNIT]
    S415 --> S416[ADDITION REQUEST]
    S416 --> MOBILE_TERMINAL_11[MOBILE TERMINAL 11]
    MOBILE_TERMINAL_11 -- S417 --> END2[END]
    MOBILE_TERMINAL_11 -- S416 --> STORAGE_MEDIUM_12[STORAGE MEDIUM 12]
    STORAGE_MEDIUM_12 -- S418 --> ELECTRONIC_ADDITION[ELECTRONIC VALUE ADDITION PROCESSING]
    ELECTRONIC_ADDITION --> END3[END]
  
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FIG.7

